Design Insertion in the development process of Brazilian Toy Companies

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ABSTRACT

Design is gradually becoming a desirable element to be integrated inside companies, but few is yet studied about its integration inside the processes of toy manufacturer companies. The present study aimed to evaluate the integration of design Activities in the product development process (PDP) of three different Brazilian toy companies. For that goal, we analyzed together the development process of three chosen companies. The compared results assisted on the generation of a representative PDP Model for the brazilian toy industry, helping understanding the development flow, the strong points and the possible points to be improved during the process.

1. INTRODUCTION

In recent years, different industrial segments have been reconfiguring their product development processes to better adapt to the ever-changing demands of society. Faced with current demands, Design has been introduced as a strategic agent in business, bringing different approaches to new products development that are geared to the needs of users, enabling higher acceptance rates. Like other segments, the toy industry has also modified to meet new demands, seeking to develop products that align with the contemporary child. The Brazilian toys industry is a currently growing segment that attends mostly to his big domestic market. However, as noted by reports performed by the Brazilian Toy Manufacturer´s Association (ABRINQ, 2014), imports still dominates the market share, highly surpassing exports. Faced with low representation in both local and international market, the secretary of foreign trade has been working with leaders in the segment to create programs for developing design and innovation (Mefano, 2005).

However, there has not been significant researches that aimed to track the design insertion on Brazilian toy companies. Also, considered mostly as a ramification of industrial design (Heskett, 1998) there are not many references of ways, methods, or even implications of the act of projecting toys. For this research purpose, we decided to analyze Toy design methods as a variation of traditional product development processes. By attempting this approach, we identify some of its peculiarities. Griffin (2002) defines the product Development Process (PDP) as a group of activities and tasks clearly defined that describes the usual ways in which a product development happens. The process delineates the order and sequence of activities, indicating the main responsible for each. It may not fully represent all possible variables, but PDP flows are valuable at an understanding level.

The current research, part of a bigger project (FERNANDES, 2015), realized a comparative analysis of the PDP of three Brazilian toy companies that integrated design teams in their structure. With each having different expertise and processes, we aimed to develop a representative model for the development of toys of different kinds.

2. METHODOLOGY

This research required three main steps for its performance. First, we had to select a suitable sample that could be representative to the Brazilian toy industry and viable for the research. Then, we needed an assessment model to collect accurate information of the companies' processes. Finally, we had to select a base PDP that could link together the different processes of the companies.

About the sample, due to accessibility and required time to perform in depth researches with working companies, we decided to base this research on a small quantity of case studies that could be representative for the Brazilian industry. Based on available data regarding companies' (ABRINQ, 2014), we contacted over ninety companies through surveys. The choice of the companies depended on the following five factors: Market time and relation with design activities; Relevance of the company for the Market; Function and value attributed to design teams; Insertion of Designers inside structure; and Availability for research. By receiving the survey responses we reduced the research sample to three companies, all located on the State of Sao Paulo, with approximately 30 years of production activity and at least 10 years of work with internal Design teams. The companies focuses on children of different ages, working with products such as jigsaw puzzles; board games; baby and toddler toys; Dolls; and general plastic toys.

For accessing the PDP, the companies did not have a formalized process that could be directly collected as Data. Therefore, we defined semi-structured interviews as the most viable way for assessing their models. In each company, we aimed to collect stable data from key members responsible for both the general strategic and the specific operational steps of the process. We interviewed main board and development Directors, Development Sector Leaders and regular employed Designers. Table 1 illustrates the questions:

Table 1. Interview Script questions

Strategy related questions	Operation Related Questions
How much the company formalizes plans to define its activities?	Does the company pocess a structured PDP?
How is the development / definition process of the companies strategies ?	how is the generic PDP process of the company?
Who are delegated to elaborating the company strategic plans?	Who are the key members alongside the PDP stages?
How do you define and evaluate the strategies goals?	How do you define the conclusion of each step ?
Does the company has a formalized plan for Design activities?	Is there a structured Design process in the company?
Who is responsible for elaborating the Design Strategic Definitions?	Who are the responsibles for the Design process?
In which planning stages, levels or decision types, Designers make part of?	What are the activities delegated to Designers?

For the PDP models, each company presented peculiarities in their processes that brought some difficulties for the comparative analysis. For generating a PDP that could be applied in different companies, we compared the companies` processes together side by side with a Ulrich`s (2012) generic five phases model: Planning; concept development; product specifications; tests and improvements; and large scale production.

3. DEVELOPED FLOWCHART FOR TOY DEVELOPMENT PROCESS

From the obtained data, we developed the Toy Development Process Flowchart on figure 1. From it, we can see the activities delegated to internal and external agents of the company, but with focus on the designers. The activities changes depending on the product nature or required activity, varying between graphic and product design activities.
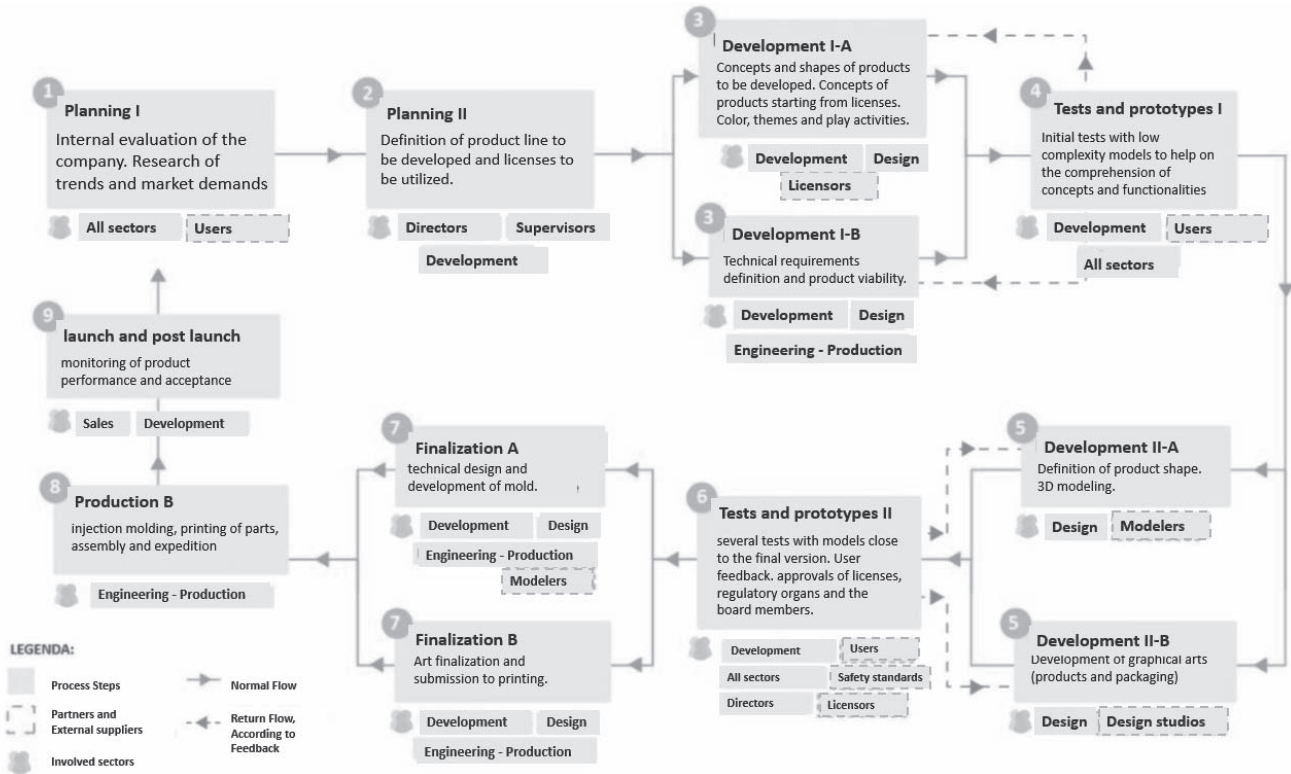

Figure 1: Product Development Process of toy companies.

The flowchart begins with two main planning stages. In the first stage, the companies perform an informal internal evaluation of their products and of market demands. On the second stage, the main directors defines the product lines that will be developed during the year. Users and regular employers are not regularly integrated in the planning. Due to that, we suggest a better formalization of this activity and a better involvement of the user to assist on better elaborating and communicating the defined strategies.

The stage 3 divides on the developing stages I-A and I-B according the company focus. On graphical toys companies, such as board games, there seemed to be a bigger focus on the product concept and on their licenses rather than on technical definitions required for the product viability. Regardless of the difference, both stages should be equally considered, with technical definitions being a collaboration between designers and production engineers. The following stage 4, entitled tests and prototypes I, is a suggested formalization of a concept test stage. It predicts returns to past stages according to the obtained feedback from both users and company's members.

The stage 5 also divides on development II-A and II-B but depends more on the product nature. When the product is three-dimensional, there is a trend of outsourcing external modellers instead of relying on internal designers. This is a common practice that we suggest considerations on its benefits. When the toy is graphic, there is a need of contacting licensors and artists for artworks acquirement. The development of graphical

arts is also applicable on Packaging Design, a common activity regardless of the product nature. On stage 6, there is a second run of tests. This time, with the product closer to the final version, the test is more formalized, involving its main stakeholders such as children, parents, main directors, licensors and safety standards regulators. This stage represented one of the main points to be improved in the process, with the companies not demonstrating formalized techniques for gathering the necessary data.

When the tests shows sufficient acceptance, the product can then be finalized on stages 7, produced on stage 8, and launched on stage 9. On these last stages, the participation of designer's members was discreet, with the research suggesting more active participations at the launch and post launch stage, evaluating user feedback for modifications, improvements, and future products definitions. The Sales Feedback represents one the main data for restarting the process on Stage 1, usually on a yearly base.

4. CONCLUSIONS

From the flowchart model, we could get closer on the methods for developing toy products in Brazil. The flowchart, however, is still considerably generalist, not having many particularities exclusive to the toy industry. It`s important to reinforce that the main role of the developed model is to indicate how the toy industry is currently operating. From that, we can learn how to develop methods to improve the quality and originality of our toys.

The evident points that we could see was the lack of formalization and design insertion on the activities of planning the companies` strategies and products to be developed, testing concepts and prototypes, and gathering significant feedback from the user. In the operational stages, designers seems to be working at a functional level, assuming traditional roles, although notably more inclined to graphic design activities.

The main limitation of the research was dealing with case studies instead of a large sample. However, being the companies among the most representatives for the Brazilian market and one of the few ones with internal design teams, we believe that the obtained data is representative for this market. Our developed model showed great acceptance from the companies that took part in the research, but for further developing it, we intend to test it on Brazilian companies and on companies from different countries. Our main goal is to improve its flaws so we can reach more ideal PDP Models for developing play artefacts.

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